

WHAT IS CLAIMED IS:

1. A system for uploading content comprising:  
a sender capable of sending an upload request, wherein the upload request comprises a request to upload content from the sender to a recipient; and  
5 a network entity capable of receiving the upload request, and thereafter determining an upload schedule relating to at least one of the time and manner of uploading the content, and wherein the sender is capable of uploading the content to the recipient in accordance with the upload schedule.
- 10 2. A system according to Claim 1, wherein the sender is further capable of deleting the content from memory of the sender after uploading the content to the recipient.
- 15 3. A system according to Claim 1, wherein the upload schedule includes at least one instruction based upon state information regarding at least one of the recipient and the sender, and wherein the sender is further capable of receiving the state information before uploading the content such that the sender is capable of uploading the content based upon the state information.
- 20 4. A system according to Claim 3, wherein the sender is capable of receiving state information comprising at least one of a connectivity, location, actual movement and predicted movement of at least one of the recipient and the sender.
- 25 5. A system according to Claim 1, wherein the upload schedule includes at least one instruction based upon state information regarding at least one network over which the content is uploaded, and wherein the sender is further capable of receiving the state information before uploading the content such that the sender is capable of uploading the content based upon the state information.
- 30 6. A system according to Claim 5, wherein the sender is capable of receiving state information comprising at least one of traffic on the at least one network and

bandwidth available to at least one of the recipient and the sender on the at least one network.

7. A system according to Claim 1, wherein the upload schedule includes at  
5 least one instruction defining processing the content, and wherein the sender is further  
capable of processing the content such that the sender is capable of uploading the  
processed content.

8. A system according to Claim 7, wherein the sender is capable of at least  
10 one of transcoding and truncating at least a portion of the content such that the sender is  
capable of uploading the at least one of the transcoded and truncated portion of the  
content.

9. A system according to Claim 7, wherein the sender is capable of breaking  
15 up the upload content into a plurality of portions such that the sender is capable of  
uploading the portions of the upload content.

10. A system according to Claim 1, wherein the upload schedule includes at  
least one instruction defining at least one deadline for uploading the content, and wherein  
20 the sender is capable of uploading the content based upon the at least one deadline.

11. A system according to Claim 1, wherein the content includes a plurality of  
pieces, wherein the upload schedule includes at least one instruction comprising an  
ordering of the plurality of pieces of the content, and wherein the sender is capable of  
25 uploading at least a portion of the content based upon the ordering of the plurality of  
pieces of the content.

12. A system according to Claim 1, wherein the upload schedule includes at  
least one instruction based upon the content and at least one network over which the  
30 content is uploaded, and wherein the sender is capable of uploading the content based  
upon the content and the at least one network.

13. A system according to Claim 1, wherein the upload schedule includes at least one instruction based upon at least one upload time of the content determined based upon the content and at least one network over which the content is uploaded, and  
5 wherein the sender is capable of uploading the content based upon the at least one upload time.

14. A system according to Claim 1, wherein the sender is further capable of receiving a trigger to send an upload request before sending the upload request, and  
10 wherein the sender is capable of sending the upload request in response to the trigger independent of interaction from a user of the sender.

15. A system according to Claim 1, wherein the content comprises a plurality of data packets, and wherein the sender is capable of sending an upload descriptor and  
15 thereafter uploading the content, wherein at least one of the sender and the network entity is capable of determining if an interruption occurs in uploading the plurality of data packets such that the recipient receives less than the plurality of data packets of the content, and wherein, if an interruption occurs in uploading the plurality of data packets, the network entity is capable of recovering the content based upon the upload descriptor  
20 such that the recipient receives the plurality of data packets.

16. A system according to Claim 15, wherein the network entity is capable of recovering the content by determining at least one remaining data packet to be uploaded to the recipient to thereby complete uploading of the plurality of data packets of the  
25 content, and thereafter instructing the sender to send the at least one remaining data packet such that the recipient receives the at least one remaining data packet.

17. A system according to Claim 1, wherein the content comprises a plurality of data packets, and wherein the sender is capable of uploading the plurality of data  
30 packets and at least one information packet regarding at least one group of at least one data packet.

18. A system according to Claim 17, wherein the network entity is capable of monitoring the uploaded data packets to determine, based upon at least one information packet, if an interruption occurs in uploading the plurality of data packets such that the recipient receives less than the plurality of data packets of the content, and wherein, if an interruption occurs in uploading the plurality of data packets, the network entity is capable of recovering the content such that the recipient receives the plurality of data packets.

19. A system according to Claim 1, wherein at least one of the sender and the network entity is capable of determining if an interruption occurs in uploading the content such that the recipient only receives a portion of the content, and wherein, if an interruption occurs in uploading the content, the sender is capable of receiving a length of the received portion of the content such that the sender is capable of thereafter uploading a remaining portion of the content to thereby recover the content such that the recipient receives all of the content.

20. A system according to Claim 19, wherein the sender is capable of uploading a remaining portion of the content based upon a bit range of the remaining portion of the content.

21. A system according to Claim 19, wherein the sender is capable of receiving a length of the received portion of the content in accordance with a hypertext transfer protocol (HTTP) HEAD technique.

22. A system according to Claim 21, wherein the sender is capable of uploading the remaining portion of the content in accordance with one of a HTTP POST and a HTTP PUT technique, wherein the one of the HTTP POST and HTTP PUT technique includes uploading the remaining portion of the content including header information comprising a bit range of the remaining portion of the content.

23. A terminal for uploading content comprising:  
a controller capable of sending an upload request to a network entity, the upload request comprising a request to upload content from the terminal to a recipient, wherein the controller is capable of sending the upload request such that the network entity is  
5 capable of determining an upload schedule relating to at least one of the time and manner of uploading the content, and wherein the controller is capable of uploading the content to the recipient in accordance with the upload schedule.

24. A terminal according to Claim 23 further comprising:  
10 a memory capable of storing the content, wherein the controller is capable of deleting the content from the memory after uploading the content to the recipient.

25. A terminal according to Claim 23, wherein the upload schedule includes at least one instruction based upon state information regarding at least one of the recipient  
15 and the terminal, and wherein the controller is capable of receiving the state information before uploading the content such that the controller is capable of uploading the content based upon the state information.

26. A terminal according to Claim 25, wherein the controller is capable of  
20 receiving state information comprising at least one of a connectivity, location, actual movement and predicted movement of at least one of the recipient and the terminal.

27. A terminal according to Claim 23, wherein the upload schedule includes at least one instruction based upon state information regarding at least one network over  
25 which the content is uploaded, and wherein the controller is capable of receiving the state information before uploading the content such that the controller is capable of uploading the content based upon the state information.

28. A terminal according to Claim 27, wherein the controller is capable of  
30 receiving state information comprising at least one of traffic on the at least one network

and bandwidth available to at least one of the recipient and the terminal on the at least one network.

29. A terminal according to Claim 23, wherein the upload schedule includes at  
5 least one instruction defining processing the content, and wherein the controller is capable of processing the content such that the controller is capable of uploading the content comprises uploading the processed content.

30. A terminal according to Claim 29, wherein the controller is capable of at  
10 least one of transcoding and truncating at least a portion of the content such that the controller is capable of uploading the at least one of the transcoded and truncated portion of the content.

31. A terminal according to Claim 29, wherein the controller is capable of  
15 breaking up the upload content into a plurality of portions such that the controller is capable of uploading the portions of the upload content.

32. A terminal according to Claim 23, wherein the upload schedule includes at  
least one instruction defining at least one deadline for uploading the content, and wherein  
20 the controller is capable of uploading the content based upon the at least one deadline.

33. A terminal according to Claim 23, wherein the content includes a plurality  
of pieces, wherein the upload schedule includes at least one instruction comprising an  
ordering of the plurality of pieces of the content, and wherein the controller is capable of  
25 uploading at least a portion of the content based upon the ordering of the plurality of pieces of the content.

34. A terminal according to Claim 23, wherein the upload schedule includes at  
least one instruction based upon the content and at least one network over which the  
30 content is uploaded, and wherein the controller is capable of uploading the content based upon the content and the at least one network.

35. A terminal according to Claim 23, wherein the upload schedule includes at least one instruction based upon at least one upload time of the content determined based upon the content and at least one network over which the content is uploaded, and  
5 wherein the controller is capable of uploading the content based upon the at least one upload time.

36. A terminal according to Claim 23, wherein the controller is further capable of receiving a trigger to send an upload request such that the controller is capable of  
10 sending the upload request in response to the trigger independent of interaction from a user of the terminal.

37. A terminal according to Claim 23, wherein the content comprises a plurality of data packets, wherein the controller is capable of sending an upload  
15 descriptor and thereafter uploading the content such that at least one of the controller and the network entity is capable of determining if an interruption occurs in uploading the plurality of data packets such that the recipient receives less than the plurality of data packets of the content, and if an interruption occurs in uploading the plurality of data packets, such that the network entity is capable of recovering the content based upon the  
20 upload descriptor such that the recipient receives the plurality of data packets.

38. A terminal according to Claim 37, wherein the controller is capable of sending the upload descriptor and thereafter uploading the content such that, if an interruption occurs in uploading the plurality of data packets, the network entity is  
25 capable of recovering the content by determining at least one remaining data packet to be uploaded to the recipient to thereby complete uploading of the plurality of data packets of the content, and thereafter instructing the terminal to send the at least one remaining data packet such that the controller is capable of uploading the at least one remaining data packet such that the recipient receives all of the content.

30

39. A terminal according to Claim 23, wherein the content comprises a plurality of data packets, and wherein the controller is capable of uploading the plurality of data packets and at least one information packet regarding at least one group of at least one data packet.

5

40. A terminal according to Claim 39, wherein the controller is capable of uploading the plurality of data packets and the at least one information packet such that the network entity is capable of monitoring the uploaded data packets to determine, based upon at least one information packet, if an interruption occurs in uploading the plurality of data packets such that the recipient receives less than the plurality of data packets of the content, and if an interruption occurs in uploading the plurality of data packets, such that the network entity is capable of recovering the content such that the recipient receives the plurality of data packets.

10

15

41. A terminal according to Claim 23, wherein the controller is capable of uploading the content such that at least one of the controller and the network entity is capable of determining if an interruption occurs in uploading the content such that the recipient only receives a portion of the content, and if an interruption occurs in uploading the content, the controller is capable of receiving a length of the received portion of the content, and thereafter uploading a remaining portion of the content to thereby recover the content such that the recipient receives all of the content.

20

25

42. A terminal according to Claim 41, wherein the controller is capable of uploading a remaining portion of the content based upon a bit range of the remaining portion of the content.

43. A terminal according to Claim 41, wherein the controller is capable of receiving a length of the received portion of the content in accordance with a hypertext transfer protocol (HTTP) HEAD technique.

30



44. A terminal according to Claim 43, wherein the controller is capable of uploading a remaining portion of the content in accordance with one of a HTTP POST and a HTTP PUT technique, wherein the one of the HTTP POST and HTTP PUT technique includes uploading the remaining portion of the content including header  
5 information comprising a bit range of the remaining portion of the content.

45. A network entity comprising:  
a processor capable of operating an upload agent, the upload agent being capable of receiving a request to upload content from a sender, and determining an upload  
10 schedule relating to at least one of the time and manner of uploading the content, wherein the upload agent is capable of determining the upload schedule such that the sender is thereafter capable of uploading the content in accordance with the upload schedule.

46. A system according to Claim 45, wherein the upload agent is capable of  
15 determining an upload schedule including at least one instruction based upon state information regarding at least one of the recipient and the sender such that the sender is capable of receiving the state information before uploading the content to thereby upload the content based upon the state information.

20 47. A system according to Claim 45, wherein the upload agent is capable of determining an upload schedule including at least one instruction based upon state information regarding at least one network over which the content is uploaded such that the sender is capable of receiving the state information before uploading the content to thereby upload the content based upon the state information.

25

48. A system according to Claim 45, wherein the upload agent is capable of determining an upload schedule including at least one instruction defining processing the content such that the sender is capable of processing the content and uploading the processed content.

30

49. A system according to Claim 45, wherein the upload agent is capable of determining an upload schedule including at least one instruction defining at least one deadline for uploading the content such that the sender is capable of uploading the content based upon the at least one deadline.

5

50. A system according to Claim 45, wherein the content includes a plurality of pieces, and wherein the upload agent is capable of determining an upload schedule including at least one instruction comprising an ordering of the plurality of pieces of the content such that the sender is capable of uploading at least a portion of the content based upon the ordering of the plurality of pieces of the content.

10

51. A system according to Claim 45, wherein the upload agent is capable of determining an upload schedule including at least one instruction based upon the content and at least one network over which the content is uploaded such that the sender is capable of uploading the content based upon the content and the at least one network.

15

52. A system according to Claim 45, wherein the upload agent is capable of determining an upload schedule including at least one instruction based upon at least one upload time of the content such that the sender is capable of uploading the content based upon the at least one upload time, the at least one upload time of the content being determined based upon the content and at least one network over which the content is uploaded.

20

53. A system according to Claim 45, wherein the content comprises a plurality of data packets, wherein the upload agent is capable of determining the upload schedule such that the sender is thereafter capable of sending an upload descriptor and thereafter uploading the plurality of data packets, wherein the upload agent is capable of determining if an interruption occurs in uploading the plurality of data packets such that a recipient of the content receives less than the plurality of data packets of the content, and wherein, if an interruption occurs in uploading the plurality of data packets, the upload

25

30

agent is capable of recovering the content based upon the upload descriptor such that the recipient receives the plurality of data packets.

54. A system according to Claim 53, wherein the upload agent is capable of  
5 recovering the content by determining at least one remaining data packet to be uploaded to the recipient to thereby complete uploading of the plurality of data packets of the content, and thereafter instructing the sender to send the at least one remaining data packet such that the recipient receives the at least one remaining data packet.

10 55. A system according to Claim 45, wherein the content comprises a plurality of data packets, and wherein the upload agent is capable of determining the upload schedule such that the sender is thereafter capable of uploading the plurality of data packets and at least one information packet regarding at least one group of at least one data packet.

15 56. A system according to Claim 55, wherein the upload agent is capable of monitoring the uploaded data packets to determine, based upon at least one information packet, if an interruption occurs in uploading the plurality of data packets such that a recipient of the content recipient receives less than the plurality of data packets of the  
20 content, and wherein, if an interruption occurs in uploading the plurality of data packets, the upload agent is capable of recovering the content such that the recipient receives the plurality of data packets.

25 57. A system according to Claim 45, wherein the upload agent is capable of determining if an interruption occurs in uploading the content such that a recipient of the content only receives a portion of the content, and wherein, if an interruption occurs in uploading the content, the upload agent is capable of sending the sender a length of the received portion of the content such that the sender is capable of thereafter uploading a remaining portion of the content to thereby recover the content such that the recipient  
30 receives all of the content.

58. A method of uploading content comprising:  
receiving an upload request from a sender, wherein the upload request comprises  
a request to upload content from the sender to a recipient;  
determining an upload schedule relating to at least one of the time and manner of  
5 uploading the content; and  
uploading the content to the recipient in accordance with the upload schedule.

59. A method according to Claim 58 further comprising:  
deleting the content from memory of the sender after uploading the content to the  
10 recipient.

60. A method according to Claim 58, wherein the upload schedule includes at  
least one instruction based upon state information regarding at least one of the recipient  
and the sender, and wherein the method further comprises:  
15 receiving the state information before uploading the content, wherein uploading  
the content comprises uploading the content based upon the state information.

61. A method according to Claim 60, wherein receiving the state information  
comprises receiving state information comprising at least one of a connectivity, location,  
20 actual movement and predicted movement of at least one of the recipient and the sender.

62. A method according to Claim 58, wherein the upload schedule includes at  
least one instruction based upon state information regarding at least one network over  
which the content is uploaded, and wherein the method further comprises:  
25 receiving the state information before uploading the content, wherein uploading  
the content comprises uploading the content based upon the state information.

63. A method according to Claim 62, wherein receiving the state information  
comprises receiving state information comprising at least one of traffic on the at least one  
30 network and bandwidth available to at least one of the recipient and the sender on the at  
least one network.

64. A method according to Claim 58, wherein the upload schedule includes at least one instruction defining processing the content, and wherein the method further comprises:

5 processing the content, and wherein uploading the content comprises uploading the processed content.

65. A method according to Claim 64, wherein processing the content comprises at least one of transcoding and truncating at least a portion of the content, and  
10 wherein uploading the content comprises uploading the at least one of the transcoded and truncated portion of the content.

66. A method according to Claim 64, wherein processing the content comprises breaking up the upload content into a plurality of portions, and wherein  
15 uploading the content comprises uploading the portions of the upload content.

67. A method according to Claim 58, wherein the upload schedule includes at least one instruction defining at least one deadline for uploading the content, and wherein uploading the content comprises uploading the content based upon the at least one  
20 deadline.

68. A method according to Claim 58, wherein the content includes a plurality of pieces, wherein the upload schedule includes at least one instruction comprising an ordering of the plurality of pieces of the content, and wherein uploading the content  
25 comprises uploading at least a portion of the content based upon the ordering of the plurality of pieces of the content.

69. A method according to Claim 58, wherein the upload schedule includes at least one instruction based upon the content and at least one network over which the  
30 content is uploaded, and wherein uploading the content comprises uploading the content based upon the content and the at least one network.

70. A method according to Claim 58, wherein the upload schedule includes at least one instruction based upon at least one upload time of the content determined based upon the content and at least one network over which the content is uploaded, and  
5 wherein uploading the content comprises uploading the content based upon the at least one upload time.

71. A method according to Claim 58 further comprising:  
sending a trigger to the sender to send an upload request before receiving the  
10 upload request, wherein receiving an upload request comprises receiving an upload request in response to the trigger independent of interaction from a user of the sender.

72. A method according to Claim 58, wherein the content comprises a plurality of data packets, wherein uploading the content comprises sending an upload  
15 descriptor and thereafter uploading the content, and the method further comprises:  
determining if an interruption occurs in uploading the plurality of data packets such that the recipient receives less than the plurality of data packets of the content; and if an interruption occurs in uploading the plurality of data packets,  
recovering the content based upon the upload descriptor such that the recipient  
20 receives the plurality of data packets.

73. A method according to Claim 72, wherein recovering the content comprises:  
determining at least one remaining data packet to be received at the recipient to  
25 thereby complete uploading of the plurality of data packets of the content;  
instructing the sender to send the at least one remaining data packet; and  
uploading the at least one remaining data packet such that the recipient receives all of the content.

30 74. A method according to Claim 58, wherein the content comprises a plurality of data packets, and wherein uploading the content comprises uploading the

plurality of data packets and at least one information packet regarding at least one group of at least one data packet.

75. A method according to Claim 74 further comprising:  
5 monitoring the uploaded data packets to determine, based upon at least one information packet, if an interruption occurs in uploading the plurality of data packets such that the recipient receives less than the plurality of data packets of the content; and if an interruption occurs in uploading the plurality of data packets,  
recovering the content such that the recipient receives the plurality of data  
10 packets.

76. A method according to Claim 58 further comprising:  
determining if an interruption occurs in uploading the content such that the recipient only receives a portion of the content; and if an interruption occurs in uploading  
15 the content,  
receiving a length of the received portion of the content to the sender; and  
uploading a remaining portion of the content to thereby recover the content such that the recipient receives all of the content.

20 77. A method according to Claim 76, wherein uploading a remaining portion of the content comprises uploading a remaining portion of the content based upon a bit range of the remaining portion of the content.

78. A method according to Claim 76, wherein receiving a length of the  
25 received portion of the content comprises receiving a length of the received portion of the content in accordance with a hypertext transfer protocol (HTTP) HEAD technique.

79. A method according to Claim 78, wherein uploading a remaining portion of the content comprises uploading a remaining portion of the content in accordance with  
30 one of a HTTP POST and a HTTP PUT technique, wherein the one of the HTTP POST and HTTP PUT technique includes uploading the remaining portion of the content

including header information comprising a bit range of the remaining portion of the content.

5           80.     A computer program product for uploading content, the computer program product comprising at least one computer-readable storage medium having computer-readable program code portions stored therein, the computer-readable program code portions comprising:

          a first executable portion for receiving an upload request from a sender, wherein the upload request comprises a request to upload content from the sender to a recipient;

10           a second executable portion for determining an upload schedule relating to at least one of the time and manner of uploading the content; and

          a third executable portion for uploading the content to the recipient in accordance with the upload schedule.

15           81.     A computer program product according to Claim 80 further comprising:  
          a fourth executable portion for deleting the content from memory of the sender after uploading the content to the recipient.

20           82.     A computer program product according to Claim 80, wherein the upload schedule includes at least one instruction based upon state information regarding at least one of the recipient and the sender, and wherein the computer program product further comprises:

          a fourth executable portion for receiving the state information before uploading the content, wherein the third executable portion is adapted to upload the content based  
25           upon the state information.

          83.     A computer program product according to Claim 82, wherein the fourth executable portion is adapted to receive state information comprising at least one of a connectivity, location, actual movement and predicted movement of at least one of the  
30           recipient and the sender.



84. A computer program product according to Claim 80, wherein the upload schedule includes at least one instruction based upon state information regarding at least one network over which the content is uploaded, and wherein the computer program product further comprises:

5 a fourth executable portion for receiving the state information before uploading the content, wherein the third executable portion is adapted to upload the content based upon the state information.

85. A computer program product according to Claim 84, wherein the fourth  
10 executable portion is adapted to receive state information comprising at least one of traffic on the at least one network and bandwidth available to at least one of the recipient and the sender on the at least one network.

86. A computer program product according to Claim 80, wherein the upload  
15 schedule includes at least one instruction defining processing the content, and wherein the computer program product further comprises:

a fourth executable portion for processing the content, and wherein the third executable portion is adapted to upload the processed content.

20 87. A computer program product according to Claim 86, wherein the fourth executable portion is adapted to at least one of transcode and truncate at least a portion of the content, and wherein the third executable portion is adapted to upload the at least one of the transcoded and truncated portion of the content.

25 88. A computer program product according to Claim 86, wherein the fourth executable portion is adapted to break up the upload content into a plurality of portions, and wherein the third executable portion is adapted to upload the portions of the upload content.

30 89. A computer program product according to Claim 80, wherein the upload schedule includes at least one instruction defining at least one deadline for uploading the

content, and wherein the third executable portion is adapted to upload the content based upon the at least one deadline.

5           90.     A computer program product according to Claim 80, wherein the content includes a plurality of pieces, wherein the upload schedule includes at least one instruction comprising an ordering of the plurality of pieces of the content, and wherein the third executable portion is adapted to upload at least a portion of the content based upon the ordering of the plurality of pieces of the content.

10           91.     A computer program product according to Claim 80, wherein the upload schedule includes at least one instruction based upon the content and at least one network over which the content is uploaded, and wherein the third executable portion is adapted to upload the content based upon the content and the at least one network.

15           92.     A computer program product according to Claim 80, wherein the upload schedule includes at least one instruction based upon at least one upload time of the content determined based upon the content and at least one network over which the content is uploaded, and wherein the third executable portion is adapted to upload the content based upon the at least one upload time.

20

          93.     A computer program product according to Claim 80 further comprising:  
          a fourth executable portion for receiving a trigger to send an upload request  
before the first executable portion sends the upload request, wherein the first executable  
portion is adapted to send the upload request in response to the trigger independent of  
25   interaction from a user of the sender.

          94.     A computer program product according to Claim 80, wherein the content  
comprises a plurality of data packets, wherein the third executable portion is adapted to  
send an upload descriptor and thereafter upload the content, and wherein the computer  
30   program product further comprises:

a fourth executable portion for determining if an interruption occurs in uploading the plurality of data packets such that the recipient receives less than the plurality of data packets of the content and if an interruption occurs in uploading the plurality of data packets, for recovering the content based upon the upload descriptor such that the  
5 recipient receives the plurality of data packets.

95. A computer program product according to Claim 94, wherein the fourth executable portion is adapted to determine at least one remaining data packet to be received at the recipient to thereby complete uploading of the plurality of data packets of  
10 the content, and instruct the sender to send the at least one remaining data packet, and wherein the third executable portion is adapted to upload the at least one remaining data packet such that the recipient receives all of the content.

96. A computer program product according to Claim 80, wherein the content  
15 comprises a plurality of data packets, and wherein the third executable portion is adapted to upload the plurality of data packets and at least one information packet regarding at least one group of at least one data packet.

97. A computer program product according to Claim 96 further comprising:  
20 a fourth executable portion for monitoring the uploaded data packets to determine, based upon at least one information packet, if an interruption occurs in uploading the plurality of data packets such that the recipient receives less than the plurality of data packets of the content, and if an interruption occurs in uploading the plurality of data packets, for recovering the content such that the recipient receives the plurality of data  
25 packets.

98. A computer program product according to Claim 80 further comprising:  
a fourth executable portion for determining if an interruption occurs in uploading the content such that the recipient only receives a portion of the content, and if an  
30 interruption occurs in uploading the content, for receiving a length of the received portion of the content to the sender, wherein the third executable portion is adapted to upload a

remaining portion of the content to thereby recover the content such that the recipient receives all of the content.

5        99.     A computer program product according to Claim 98, wherein the third executable portion is adapted to upload a remaining portion of the content based upon a bit range of the remaining portion of the content.

10       100.    A computer program product according to Claim 98, wherein the fourth executable portion is adapted to receiving a length of the received portion of the content in accordance with a hypertext transfer protocol (HTTP) HEAD technique.

15       101.    A computer program product according to Claim 100, wherein the third executable portion is adapted to upload a remaining portion of the content in accordance with one of a HTTP POST and a HTTP PUT technique, wherein the one of the HTTP POST and HTTP PUT technique includes uploading the remaining portion of the content including header information comprising a bit range of the remaining portion of the content.